THIRTY-NINTH ANNUAL REPORT

OF THE

SOUTH CAROLINA

STATE BOARD OF FISHERIES

YEAR ENDING JUNE 30, 1945

TO THE

GOVERNOR AND GENERAL ASSEMBLY

1945

PRINTED UNDER THE DIRECTION OF THE
JOINT COMMITTEE ON PRINTING
GENERAL ASSEMBLY OF SOUTH CAROLINA

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ANNUAL REPORT

To His Excellency, Governor Ransome J. Williams and the Hon. General Assembly of the State of South Carolina, Session 1946.

This is the thirty-ninth annual report that has been made to the Governor and General Assembly of South Carolina. This department is very much pleased that the General Assembly at its last session passed an Act to appoint a committee to investigate the laws pertaining to commercial fishing in South Carolina, as we feel that a great deal can and will be accomplished by this investigation as there are several laws that are obsolete, and there are many laws that should be changed for the welfare of conservation and the fishermen. This department will cooperate in every way possible with this committee to obtain results and we will make certain suggestions as to the changes of certain laws, and the cancellation of some and the addition of others that we deem advisable.

This Board was created in February 1906 and has been operating for almost 40 years, therefore, you can readily see that certain changes should be made in the laws covering same.

War conditions caused many changes to take place in this industry, particularly by the shortage of labor and the restricted areas in which the fishermen were not permitted to operate on account of the regulations caused by the war. Now that the war is over we feel that conditions will soon be normal and that there will be quite an increase in the production; also, that labor will be more plentiful and thereby place the fishing industry on a very profitable basis. It is very necessary that we have laws by which this department can carry on for the benefit of conservation, particularly, as there will be many more fishermen operating in the future than in the past.

Commercial fishing is one of the important industries that South Carolina has. It furnishes food for thousands and thousands of families and furnishes employment for great numbers of people, who live in the coastal area of this State, without cost to them by simply going to their back door and

gathering shrimp and oysters, and catching fish. Many of these would suffer materially if this God given right was not granted to them.

This Board patrols the area extending from the Savannah River on the South to the North Carolina line on the North, and all the territory within the three mile limit on the ocean and up many streams of the State as far as sturgeon, shad and other salt water fish run. You must realize that this is an enormous area to cover and keeps this department quite busy, especially at certain times, as the fishing industry is very much a seasonal proposition. The oyster season opens October first and closes April thirtieth—the shrimp season opens July first and closes February twenty-ninth—the shad season opens on February first and closes on the twenty-fifth of March—the sturgeon season opens on March first, and closes October first—the terrapin season opens July sixteenth and closes May thirty-first and the clam season opens on the first day of August and closes the last day of April. From this, you can readily see that this department needs more inspectors at certain times of the year than they do at others for the purpose of patrolling and enforcing the laws beneficial to conservation. We hope that the investigating committee will take this fact into consideration when it makes its report to the General Assembly.

There have been quite a number of changes in the personnel of this Board during the past two years. We now have four members of the Board; one from Beaufort; one from Charleston; one from Georgetown and one from Horry. The Chairman of the Board, J. M. Witsell, is from Colleton. He spends Wednesday and Thursday of each week in the office at No. 93 Broad Street, Charleston, S. C., attending to work at hand and supervising the working of the department. He also devotes many other days in the week to work pertaining to the duties of his office as Chairman. The entire Board meets on the second Thursday in each month at which time the Chairman informs them as to what has taken place during the month and discusses with them all matters pertaining to the department. Decisions are then made as to the best policies to pursue for the following month. In case of an emergency arising the chairman acts promptly to combat same to the

best of his ability for the interest of this department and the fishermen of the industry.

If a proper survey of the oyster bottoms of this State were made, we, no doubt, would gain many acres on the oyster bottoms that we lease, as the law now requires that the applicant shall cause a survey of the area, or such portion thereof, as is reported subject to lease, said survey to be made by a competent surveyor approved by the Board of Fisheries who shall make a plat thereof in accordance with the approved form of the Board of Fisheries, and such plats shall be filed in triplicate with the Board of Fisheries before it approves said application. But the lessee employs the surveyor for this work. If the General Assembly would pass an Act to furnish an expert to examine the bottoms and designate those that could produce oysters by reclaiming and cultivating same, we believe that the oyster acreage of this State would be increased very, very much. We think it would prove a good investment for South Carolina and also for the citizens of the State for such an Act to be passed.

Many varieties of fish, such as mullet, blue fish, salt water trout, flounders, whiting, sheepshead etc., are natives of our waters and are allowed to be caught the year round in unlimited quantities. There is a restriction on the size, but there is no tax placed on these fish and no laws for the protection of same. We will again request that the General Assembly pass laws protecting same and place a small tax on same so that the Board will be able to obtain a record on the amount of each kind of fish caught which would help very much in enabling us to show the people of our State and other states what the waters in our coastal areas are producing.

The commercial fishing industry is more important at present than it has ever been since the organization of this department in the way of furnishing muchly needed food for our people.

The Board of Fisheries has jurisdiction over shad, sturgeon, oysters, clams, crabs, terrapin, shrimp, & menhaden, and is charged with the duty of enforcing the laws for violation as passed by the General Assembly, also, pertaining to the collection of impost tax on the products of our coastal waters; the enforcement of all closed seasons, the leasing of oyster

bottoms, the supervising of the planting of shell and seed oysters on the oyster bottoms and the conservation of our fish and shell fish in the coastal waters of this State. One of our very important duties, which we perform with great care, is patrolling and inspecting the polluted areas, and we make a monthly report of this to the U. S. Government. When we find any of the laws pertaining to pollution being violated we make arrests immediately and prosecute the parties. This is a very essential feature of the patrolling of these areas, for the reason that unless they were patrolled and protected there would be a great possibility of a very large spread of diseases and, too, unless this was done the Federal Government would prohibit the shipping of all seafood out of this State.

SUBJECT NUMBER ONE

SHRIMP

O. C. F. has authorized construction of 2,128 fishing craft. All but 85 of which are expected to be completed before the end of this year. This will make productive capacity greater than at any time in our history. This signifies that the fishing industry should begin to spend more money in merchandising its products than ever before in its history, coupled with the utmost vigilance to market only products of quality. South Carolina is in dire need of having the proper facilities to ice fish, shellfish and cold storage facilities for same, and other equipment such as proper docks etc. If these facilities were available, in our judgment, it would increase the volume of the fish industry many times.

The two greatest competitors of oyster-cocktail and half shell are the fruitcup and shrimp-cocktail. About one-fourth of the new fishing boats are shrimp trawlers. The addition of 500 new trawlers in the Atlantic area will greatly increase the efficiency of the shrimp fleet and increase its range. The shrimp business in our State is quite an industry, it employs numbers of men and boat crews spend large sums of money on repairs, gasoline, oil and food besides the money that is spent by the individuals personally. The number of shrimp trawlers operating in South Carolina waters for 1944-45 were 156 consisting of boats owned by citizens of South Carolina

77 and 79 boats owned by out of state people. A number of things may happen at first, production may be greatly increased. Unless the supply can stand this added strain, and I doubt that it can for long, there will follow a declining catch per unit of effort to the point where many of these boats, particularly the older and less profitable, will enter other lines of fishing. Should the annual harvest decline appreciably, oysters may still hold the place of prominence on the menu without too great an effort on our part, otherwise South Carolina had better be ready for an intensive advertising and educational program relative to oysters.

Shrimp are generally recognized as being a highly perishable food. Unlike meats they are susceptible to a ripening process. It is, therefore, essential to keep them packed in ice or stored at temperatures low enough to prevent spoilage or to subject them to some form of preservation. With such a product speed, and distribution to consuming centers is a factor of importance. This is particularly true because of the fact that the great bulk of our catch is taken on the high seas or along our coast far distant from the inland market. These facts appear to be substantiated by reports of air shipments, such as shrimp from New Orleans to St. Louis and Chicago, and from Houston to Kansas City and Chicago. And the same thing would apply to shipments from Charleston to New York and other northern markets.

In the beginning, while cost of transportation and price are primary considerations, the hotels and restaurants promise to be the best outlets for airborne shrimp and other seafood shipments. From other sources I have been informed that new, light weight, corrugated boxes, practically waterproof, have been perfected which may help to solve the problem. The tendency of consumers to do most of their buying of shrimp and other seafoods on the last three days of the week, and the uncertainty of the supply at the production points, gives the air services an advantage upon which it can readily capitalize. It is an old American custom to look for speed, more speed and still more speed. Considering the perishability of all seafoods, if the air transport service will attack the problem of providing satisfactory containers, reasonable rates and adequate pick up and delivery service, I be-

lieve they have a real opportunity for building a volume of shrimp and other seafood product shipments by air and should be in a position to render a real service in popularizing the use of seafoods by our people.

With an annual production of between four and five billion pounds of fishery products, you have a real opportunity to handle appreciable quantities of such products just as the trucks make heavy inroads on the volume of fish formally carried by railroads. And don't forget the thousands of small hamlets that rarely get fresh seafoods and the largest cities at present inadequately supplied with these choice delicacies of the seas, and, especially, make certain that these packages bear labels to show that they were airborne quality foods. It looks as if this program will be put into effect, and if it is, it will revolutionize the seafood industry in our section as well as in the other parts of the country. It should increase the consumption of same in large quantities; it will also create a much greater demand for shrimp and seafoods all over the universe, and it will place them in sections where they are very seldom consumed with the result that many more people will get sold on the idea of eating same.

We are expecting an enormous increase in the volume of shrimp during the coming year as the war restrictions will be raised, and we are expecting labor to be plentiful. There will be an increase in the number of boats and the demand is large and, we think, will take up our increase for the coming year.

Shrimp caught, in pounds, during the year of 1944-45 in the coastal waters of South Carolina amounted to 2,548,955. Shrimp headed, in pounds, amounted to 1,535,355.

The Atlantic States Marine Fisheries Commission, of which Senator J. D. Parler and Charles J. Geilfuss are members, and J. M. Witsell, Chairman of the State Board of Fisheries is Chairman and also on the Executive Committee, has been exerting every effort possible to have uniform laws passed by the adjoining states. And now that Florida has become a member of the Atlantic States Marine Fisheries Commission, we feel that it will soon be possible to have these laws perfected. North Carolina has not yet become a member of the

above commission and we do not know what her attitude will be, but we believe that Georgia, Florida and South Carolina will soon pass laws that will be beneficial to all of the states adjoining each other, particularly, as to the shrimp industry.

This department has exerted every effort possible this season to protect the shrimp and enforce the shrimp laws. The shrimp season opens July 1st. During the months of April, May and June this department prosecuted 24 shrimpers for violating the law before season opened, 22 of same were convicted, 6 receiving fines of $5.00 each, 14 received fines of $100.00 with $75.00 suspended, 2 receiving fines of $25.00 each.

SUBJECT NUMBER TWO

SHAD

The shad, one of the chief food fisheries of the Atlantic Coast, returns to spawn in the rivers in which it was hatched with a homing instinct as accurate as that of the Pacific salmon. According to the evidence collected by the biologists of the U. S. Fish and Wildlife Service, the tag which has been attached to young shad four years ago at Edenton, N. C., was recovered this season in the same area from the fish as a mature adult, service biologists have reported to Dr. Ira N. Gabrielson, Director of the Service. This is the first instance of the return of a tag from the shad tagged as immature fish, so said Dr. Gabrielson. The recovery provides fresh evidence in support of the theory held by biologists for several years, that the shad of any stream are native population returning year after year from their oceanic feeding grounds. Scientific studies of the racial characteristic of the shad, including the microscopic markings on the scales, support this view.

Practical importance of the knowledge that shad return to their parent streams to spawn is its application to the conservation of the resource which has become severely depleted during the past half century. Because of the accurate homing of shad, measures taken in any locality to restore our depleted runs may be effected to benefit that locality.

The shad is a migratory fish that enters the coastal waters in the spring to spawn in the fresh water. After spawning the adults return to the ocean. They are followed in the fall by the young fish which by that time are about as long as a man's finger. The adult fish returns from the oceanic feeding grounds year after year to spawn, unlike the Pacific salmon, which dies after a single spawning.

Although the adult shad have been tagged without difficulty, biologists have not previously succeeded in tagging the young shad, which are extremely sensitive to handling. The first successful tagging was accomplished by Edgar Hollis, Fish and Wildlife Service biologist, who tagged about 2,000 young shad at Edenton, N. C., in 1941.

Shad catch on the Atlantic Coast since the 1890s as a whole, in the Chesapeake Bay has declined from 16,000,000 to 14,-000,000 pounds annually, due principally to excessive fishing, which has not let enough shad through to spawn. In the Delaware Bay, commercial fisheries once yielded 14,000,000 pounds of shad annually which has now declined to an annual yield of 270,000 pounds; monetary loss to the industry is estimated at more than $1,000,000.00 per year. Gross pollution of the water, which has rendered many spawning areas unproductive, is believed to be the chief cause of the decline in the Delaware Bay.

In contrast, the Hudson shad fisheries has recovered from its low yield of 40,000 in 1916, to 5,000,000 pounds in 1944. This rebuilding of the Hudson River runs has been accomplished by careful regulations to allow enough spawners to escape the fishery. Individual Hudson River shad fishermen now catch more pounds of shad than during the previous period of unregulated fishing.

For the reason stated above we will recommend to the General Assembly of South Carolina that they pass an Act requiring the fishermen to place their nets 400 yards apart instead of 200 yards as the law now stands, and that the law still remain that the nets are not to be placed more than half way across the stream. Also, that the present law be retained relative to the number of days per week allowed for shad fishing. Our catch of shad for the past few years has varied very little in the number of shad caught. Some years a few

more shad are caught than in other years. The catch of shad in our waters during the past season amounted to 13,534.

Of course, during the war, conditions causing the shortage of men also caused the number of shad fishermen in our coastal waters to drop off considerably, perhaps, to the aid of conservation and this may add a great deal to the possible catch of another year.

Shad fish are bringing a high price, they average around 40c per pound, and if this price continues, as I presume it will, it will encourage many more fishermen to operate next season, which makes it doubly necessary that we hold all of the shad conservation laws on the books that we now have and then add some.

Mr. David H. Wallace, Administrative Assistant of the Department Tidewater Fisheries of Maryland, stated on April 14th, 1945 that Maryland shad catch which amounted to 7,000,000 pounds in one season, steadily declined over a period of years until it reached a low of only 500,000 pounds per year between 1939 and 1940. Since 1941 the production has gradually increased until past year's catch reached 1,000,000 pounds. The increase, Mr. Wallace said, was partly due to the fishery laws reducing the number of fishermen and permitting more fish to spawn, therefore, you can readily see from the above statement that if our General Assembly will pass a law as requested, not allowing the fishermen to place their nets closer than 400 yards apart, it will necessarily reduce the number of men allowed to fish for shad and thereby allow more shad to get by to spawn which will, naturally, increase, in the years to come, the number of shad in our waters.

From the information I am able to secure, the main depletion of shad is caused by two factors, first, pollution in some cases and secondly, allowing the waters to be overfished. Remedies should be provided to prevent polluting of the waters of our coastal section where same can be done.

The shad industry gives employment to a number of men, also, brings considerable money into our State and furnishes our citizens with a most delicious food.

We would suggest that a uniform shad season for the entire state, rather than a split season which allows the season

to remain open longer above the 40 mile limit. This makes it difficult to enforce the laws. The shad caught below the 40 mile limit is not different in appearance from the shad caught above the 40 mile limit, therefore, once the fisherman gets his fish away from the river the presumption is that the fish were not caught illegally. The law now provides that the season opens on February 1st, and closes on March 25th, that is, below the 40 mile limit, and it provides that above the 40 mile limit the season does not close until April 20th. A large part of the spawning is done late in the season around and above the 40 mile limit. A good portion of the roe fish reach the upper part of the rivers, or spawning grounds, around the time the season closes in the lower part of the rivers, but as the season is still open in the upper part of the rivers the fish are not allowed to rest and spawn but are caught and shipped to market. For this reason we would certainly think that the season being open in the upper regions of the rivers at the time shad are spawning would go a long way toward destroying the shad.

SUBJECT NUMBER THREE

ANTI POLLUTION NEEDED IN SOUTH CAROLINA

The following are the condemned areas for pollution in our State. We will start with the Daufuski Section, half of the Savannah River along the South Carolina shores, Mud Creek, Wrights River and unmarked creek to Tybee Roads, and New River to the above Rams Horn Creek, Beaufort area, Beaufort River from Black Marker No. A19 located south of Station Creek to Coosaw River, including all creeks from same, Archers Creek from Battery Creek to Broad River including all creeks leading from same, from day marker No. 204 to South Carolina State Highway Bridge, and all creeks leading from same, Chowan creek to be condemned from south end of small marsh island opposite the end of Cat Island, Station Creek will not be included in the area condemned. Charleston Area, Cooper River Bridge from Pinopolis Dam to Charleston Harbor, all creeks leading from same, Ashley River from A. C. L. Railway Bridge to Charleston Harbor, all creeks leading from same. Intracoastal waterway from approximate-

ly one mile north of Hamlin Creek to Charleston Harbor, all creeks leading from same, Gray Bay not included in the condemned area, Charleston Harbor to the Atlantic Ocean including all creeks leading from same, Schooner Creek from the Bay formed by Lighthouse Creek, small creek east of Schooner Creek, and small creek west of Schooner Creek, including in the condemned area Elliotts Creek Cut from Ashley River to Stono River, all creeks included. Stono River from day marker No. 31 to wharf on John's Island approximately one mile below Grimball's Wharf. Georgetown Area, includes Winyah Bay, Pee Dee River, and Sampit River, creeks adjacent to Pawley's Island, from Pawley's Inlet to Midway Inlet.

You can see from the above that this covers quite a large area and what is being done to correct this situation. The Health Sanitary Engineer Department of the South Carolina State Board of Health passes on the polluted areas of South Carolina producing shellfish. The Sanitary Engineer notifies the South Carolina State Board of Fisheries of the areas that are polluted and condemned. The Board of Fisheries has the waters patrolled by the inspectors of the department, and makes monthly reports to the District Director of the U. S. Public Health Service in Richmond, Va.

The pollution is growing more and more in our waters every year and, of course, is doing great damage to the shellfish industry. I suggest that the General Assembly place the matter in the hands of some department for solution. It would certainly justify the expenditure of money to protect one of our large natural resources. A number of states are not waiting for Congress to act in the matter of cleaning up polluted waters. The Legislatures of Pennsylvania and Washington have recently placed upon their statute books anti pollution laws. In Washington a pollution control commission is created. Its members composed of the directors with a Department of Conservation and Development for fisheries, game and health. This act makes it unlawful to discharge in any manner any organic or inorganic matter into the waters which will cause a polluted condition. When found guilty a polluter is subject to a fine of $100.00 or one year in prison. Each day the pollution is continued a separate violation is committed. In Pennsylvania the first bill introduced this session was on

this subject. State Representative Chas. H. Brunner, Jr., put it in the hopper and it is known as House Bill No. 1. It was backed by Governor Edward Martin and Attorney General H. Duff. General Duff has waged a splendid fight on pollution and has written many articles on the subject for state papers and magazines. Our main causes for pollution are industrial waste and municipal sewage.

Pollution is an acute matter and we respectfully recommend that a pollution commission be appointed either by the General Assembly or by the Governor for the purpose of studying and finding some solution of this very important and urgent matter. Fish have died and are dying from some cause. We would suggest that the commission consist of the Chief Game Warden, the Chairman of the Board of Fisheries, the head of the State Health Department and two other members to be appointed by the Governor or elected by the General Assembly.

SUBJECT NUMBER FOUR

MUSSELS

Years of investigations have disclosed by 1936 that the edible sea mussels of Holland provided a suitable source of raw material necessary for man made vitamin D. Mussels from the tidewater marshes have been used for commercial purposes as human food for years, so, the established Dutch Industry was in a position to respond to this newly discovered industry. The part of the mussels that supply vitamin D was Sterol. Sterol are fat, soluble, wax-like materials found in various quantities in practically all forms of animal life. The particle Sterol that can be converted into vitamin D by irradiation with ultra violet light is known as (pro vitamin D). During the three years following 1936 the supply of American made vitamin D was dependent upon Holland and its established mussel industry for this pro vitamin D.

In 1940 the ribbed mussels in the tidewaters of Virginia were discovered by Dupont chemists to be rich in pro vitamin D. The discovery was followed immediately by development of the mussel fishery on the seaside of Virginia's eastern shore peninsula, the activity centering on the large intro-tidal

marshes where the mussels grow, and in the shucking houses along the water fronts of shore towns where the mussels are steamed, shucked and packed for shipment.

This fishery has constituted the country's principal available pro vitamin D source, and large demands for eggs and poultry meat have been met by the poultry industry with the help of previously unexploited mussels.

Because of the prospective importance of these mussels, the Dupont Co., acted through the Virginia Fisheries Laboratory in 1940 to initiate the biological study of this little known bivalve.

To produce the pro vitamin D efficiently and economically, information was needed on the distribution of mussels beds, the productive capacity of an area of mussels, the effect of digging operations on the growth of mussels and the time required to grow to commercial size. There has been a great deal of progress made on this investigation.

The mussels live all but buried in the soft mud and is dug with a clam pick or similar instrument. As in the oyster industry, the bushel is the usual commercial unit. It holds about 600 mussels and is sold by the digger for about 40c to $1.00, depending on the labor situation. The average number of bushels dug per day per man is between 9 and 10. The best workers dig as much as 16 bushels during a single low tide. Mussels are dug in the marshes and transported on scows to the shucking houses. Thereafter the mussels are steamed, the meats are removed from the shells, washed, packed and frozen for shipment.

In general, the mussels are found wherever the reeded salt marshes occur. This takes in all the shores Chesapeake Bay and its tidal tributaries as far up as the salinity is suitable. The mussels range northward to Nova Scotia, and southward to Georgia; beds of considerable size occurring in the Carolinas.

The mussel population may grow into three rather distinct kinds of formations namely, tump, strip and mat. Tump formation. Scattered throughout the salt water marshes are chumps of mussels which are designated as tumps which may vary in size from a few inches to several yards in diameter, and a single tump may contain several hundred mussels of

commercial size. The most of them occur towards the sources of small ducts or drains, through which the tidewater enters and leaves the marshes. A tentative reconstruction of the development of a tump is as follows: the valve mussels attach themselves to suitable objects in the marsh, ordinarily to regroup on partly imbeded coon oysters. They become covered with the marsh mud until only the posterior or open end of the shell is visible above the mud line. The feeding process is fundamentally the same as oysters, although the actual elements of food required may be different.

Until now, the tumps of marshes have produced most of the valuable mussels.

The strip formation occurs as narrow bands around the marginal shores, thus the mussels occur in small compact groups or clusters, each group containing up to several hundred small mussels firmly imbedded in hard packed mud held together by roots of the reeds.

As in all fisheries, the basic problem to be considered is that of the extent of the natural production to the relation to the demand of the industry. It was early recognized by Dupont Co., that existing supplies of mussels might soon be exhausted, if not, methods of mussels culture comparable and used successfully by the oyster industry would need to be discovered and practiced. The problem of discovering a practical method of culture necessitated a careful study of the reproductive processes, growth and life habit of the mussel. This study is in progress but is not far enough advanced to warrant a discussion of the results obtained up to this time, therefore, it is very necessary that this industry in our state be watched closely for fear of depletion.

This industry in the past two years seems to have developed very much in South Carolina and we are suggesting to the General Assembly that it pass the same laws relative to mussels as now exist concerning oysters. The mussels belong to the oyster family and we feel that similar laws would be beneficial.

SUBJECT NUMBER FIVE

MENHADEN

The menhaden is one of the most interesting fish on the Atlantic Seaboard. It supports one of the oldest fisheries in America. It ranks second in volume of production of all U. S. Fisheries and is caught in greater quantities on the South Atlantic and Gulf Coast than all other thin fishes combined. Despite its importance, it is one of the least known fishes in our waters, for few people have ever heard of it. The explanation of this surprising situation is simple. Although almost every person in the U. S. has at sometime been indebted to the menhaden for something he eats, wears or uses, the fish has seldom been used extensively as food and, so, has not become familiar to the public. The recent development of canned menhaden, which makes this product generally available since the war has ended, and the fact that meal and oil derived from menhaden are so important to our live stock and poultry industry that this fish is only one step removed from the ham, chicken and eggs found on all of our tables.

Although the fact that it is seldom recognized, several species of menhaden are found in U. S. waters; the most important one of the Atlantic Coast being brevoortia tyrannus. In the South Atlantic region the most important menhaden fisheries are located in North Carolina and Florida, recently menhaden plants are being established in South Carolina. The chief menhaden center being the town of Beaufort, N. C. The catch for the entire area amounts to 250,000,000 pounds, or 68% of the catch of all species of fish, and 43% of all fish and shell fish combined. The total U. S. catch of menhaden is about 600,000,000 pounds.

Being members of the herring family, the menhaden resembles the more familiar shad and river herring in appearance and general characteristics. Like their relatives, they have a rich and oily flesh, most of the oil is removed during the canning process and only the large meaty cuts are packed. For several generations the manufacture of meal and oil has overshadowed all other uses for menhaden; one third of all the fish meal and one quarter of the marine animal oils produced in the U. S. are products of the menhaden industry.

The meals are fed to hogs and poultry to provide the indispensable animal protein in their diet. The oils are used in preparing fortified feeding oils for poultry. The industrial uses of menhaden are many. It is the constituent of many paints, varnishes, insect sprays, printing inks and soap. The oil is also used as a lubricant of machinery, and in leather tanning.

South Carolina has now operating in her waters five menhaden boats. These fish are caught in our waters and carried into North Carolina for processing. I am very glad to report that Mr. Wallace M. Quinn, one of the most progressive of the menhaden pioneers, has just completed a menhaden plant at White Point near Charleston, S. C., and has just started operations. He is now operating two boats and expects to add to his fleet in the future. According to reports Mr. Quinn has invested above $150,000.00 in this industry. He will produce mainly fish meal and oil from this plant. 1,-500,000 menhaden fish were caught in our waters during the past season.

SUBJECT NUMBER SIX

OYSTERS

The southern fishermen make more money from oysters than from any other item in their catch, except shrimp and mullet. The annual yield in oysters in the states from North Carolina to Texas is some 20,000,000 pounds, from which fishermen get slightly more than $1,000,000, actually a higher return per pound than received from the more productive shrimp and mullet fisheries. Although the production of oysters now is about the same as fifty years ago considering the southern area as a whole, most states show a decline.

Practically all of the canned oysters produced in the United States are prepared in the southern area. The City of Biloxi, Mississippi is now the world center for the canning of oysters, a title once held by Baltimore, Md. In 43 Mississippi packed 85,151 cases and Louisianna 79,614 cases, the remaining 50,090 cases coming from canneries mainly from the states of South Carolina, North Carolina, Georgia, Florida, and Alabama.

Oyster cultivation which reaches its greatest development in New England is practiced in the south only in a certain area. The most important of these is South Carolina and Louisianna where practically all oysters come from cultivated and leased bottoms. Through every section of the country where oysters are shucked, there is almost a universal cry from wholesalers, retailers, large consumers such as the restaurant trade and even from the individual housewife and the man who buys a dozen on the shell for his lunch. That widespread clamor, ranging from casual knowledge seeking to outright complaint, always comes in concluding phrases; what is the matter with the oyster producers? Why can't they get the qualities of oysters that used to be available and why are the prices so high? On the surface the consumer has a right to be of a questioning mind, true it has been wartime; however, hasn't production been stepped up in the food fields as well as in others? And aren't prices supposed to be controlled? He overlooks the fact that the oyster production at present is not normal and that out of this lessened volume must be supplied 40,000,000 gallons per week, which are furnished to the armed forces, a market which did not exist a few years ago but which positively had to be supplied during the period of the war. He also overlooks the thought that he never paid for oysters in their real value before the war; that the manual end of oystering is the hardest kind of labor, and that the oyster fishermen and openers are human and many of the men working in this industry preferred going to defense plants where the wages were much higher than in the oyster industry.

Now that the war has ended we hope that in the near future conditions will be more normal by which there will be much more labor and the production of oysters will be much greater and the demand for oysters much larger for the reason that during the war many people who had never eaten oysters were served with same and cultivated a taste for them.

On the cultivated reefs of the south are found many long, narrow and irregular shaped oysters which are known as coon oysters. The name said to have been given them because raccoons fed on them. These oysters are of little market value because the meat is small and poorly shaped. But they are

very valuable for the planting of oyster bottoms where sufficient shell are not available. Single oysters, of which South Carolina produces some of the finest in the land, tend to sink vertically into the mud so that the shell stands on one end and then form into long, narrow, sharp end specimens.

During the comparatively short life of oysters they face many dangers, especially from flood waters from the rivers or the breaking of levees may reduce the salinity of the water over the oyster beds so greatly that large numbers die. Heavy storms may bury the beds under sand or dislodge clusters of oysters and throw them on the beach. Gales, sometimes, have been known to establish new beds by shifting oysters to areas where none had been before. Besides storms and floods oysters also have many natural enemies. Clams, conchs and oyster drills which bore into the shells, and a peculiar yellow sponge which bores into the shell and causes it to dissolve, are the most important of the enemies in the south. It would be most beneficial if we could obtain an expert to test these bottoms and provide the proper treatment to kill these pests. If it could be done, it would prove very profitable to the oyster industry in South Carolina.

In its diet, the oyster is largely vegetarian. The most of its food consists of the minute, one cell plants called diatones which are carried to its mouth in the water which the oyster draws through its gills. The dictones, like other marine plants, are nourished by the various minerals in the sea water, and because of its diet the oyster itself is an excellent source of copper, iron, iodine and other minerals essential in the human nutrition. It also contains most of the essential vitamins, protein of high nutritive value, and starch in the easily digested form known as glycogen.

We feel that South Carolina has developed considerably in the last few years along the lines of oyster production and also in the quality and size of our oysters. We are now putting out a new single oyster which we consider superior to any other oyster on the market as to taste, and it contains more nutritive value than any other oyster.

The only thing that now exists in our state that is retarding a large production of oysters is the lack of labor. The oyster industry does not require a large number of laborers

for the gathering and picking of oysters but it does require a sizeable number for the shucking of oysters. We have been informed that there is now in process the manufacture of a machine for shucking oysters and if this machine is perfected it will bring about a great change in the oyster business.

SUBJECT NUMBER SEVEN

CULTIVATION AND LEASING OF OYSTER BOTTOMS

The following laws must be complied with before a person or corporation is granted a lease on oyster bottoms,

Code Section 3332—It shall be lawful for the Board of Fisheries to lease to any person, firm or corporation portions of the bottoms for the purpose of oyster culture not exceeding an aggregate of one thousand (1,000) acres to any person, firm or corporation for a term of not exceeding five years at the rate of rental of $1.00 per acre per year for the renewal period: Provided, however, all existing leases shall at the option of the lessee be renewed for an additional term of five years at the expiration date of the same at an annual rental of $1.00 per acre per year regardless of the terms therein now provided.

Code Section 3337—Whenever any person, firm or corporation shall desire a lease of the oyster bottoms for the planting or propagation of shellfish, application shall be made to the Board of Fisheries upon forms prescribed by it showing the location and boundaries of the area desired and shall deposit with the Board of Fisheries the sum of Ten ($10.00) Dollars as a guarantee of good faith; whereupon it shall become the duty of the Chief Inspector or District Inspector to inspect the area applied for and ascertain by such means as may be best calculated to discover the facts whether such territory or any portion thereof is capable of producing oysters and to make a report to the Board of Fisheries, whereupon the applicant shall cause a survey of the area or such portion thereof, as is reported subject to lease, said survey to be made by a competent surveyor approved by the Board of Fisheries who shall make a plat thereof in accordance with the approved form of the Board of Fisheries and such plat shall be filed in

triplicate with the Board of Fisheries before approving the said application.

Code Section 3338—Upon the filing with it of the application approved by the Chief Inspector or District Inspector and the plat of the territory so approved, the Board of Fisheries shall cause to be published in a newspaper in the county wherein the territory applied for is located and in which legal advertisements by the Sheriff are published, a notice to all persons of the application for such bottoms for planting and propagation of oysters, giving the name of the applicant and sufficient description of the bottoms applied for to enable the same to be located, and the day on which the Board will pass upon objections to the granting of such lease, which advertisement shall be published once a aweek for three weeks immediately preceding such date. Should any person appear in person or by attorney or by filing objections in writing on or before such day and object to the granting of the whole or any portion of the bottoms applied for upon any lawful or sufficient ground, then the Board may proceed to a hearing thereof as in a case at law upon the regular rules of evidence and their decision shall be subject to appeal as in a Magistrate's Court.

Code Section 3339—Whenever an application for planting ground is granted and all expenses of survey and advertising have been paid by the applicant, to be evidenced by receipted bills therefor, to be filed with the Board, it shall become the duty of the Board of Fisheries to execute and deliver to the lessee a lease of the territory allowed him on the form of lease approved by the Board of Fisheries, which form shall be in conformity with the laws governing and regulating the leasing of oyster bottoms; which lease shall contain a provision for a renewal at the expiration thereof for a similar term thereof upon such rate of rental as many then be of force.

Code Section 3340—All leases granted under the authority of this law and now of force and effect shall be upon a rental basis of $1.00 per acre per year and for each year thereafter; Provided, however, the prevailing rate of rentals in all existing leases shall prevail until the expiration of the present

year; but any new leases issued after the passage of this Act shall provide for the rate of rental hereinabove set forth.

Code Section 3342—Whenever any person shall own highlands abutting upon tide water he shall have preference in the leasing of bottoms for the planting and propagation of oysters in the waters adjacent to such highlands within the limits permitted under the law; Provided, he makes application therefor prior to the grant of a lease to other persons, but not otherwise.

Code Section 3343—Lessees of bottoms for the planting and propagation of oysters are required to plant or distribute on the leased bottoms at least one hundred bushels of shell or seed oysters per oyster bottom acre each year during the term of said lease; such planting to be under the direction of the Board of Fisheries.

The amount of shell or seed oysters to be planted by this section shall be in addition to the amount of shell required to be planted by Section 3356 of the Code of Laws, 1942.

Section 2. All Acts or Parts inconsistent herewith are hereby repealed.

Code Section 3344—Lessees of bottoms are permitted to gather seed oysters for replanting on their own leased lands from the public beds of the State which may be designated from time to time by the Chief Inspector or Assistant Inspectors, or deputy inspector for the purpose, but said oysters for replanting must be gathered during the open season for oysters or during the time immediately thereafter not later than June 1st.

Code Section 3356—The person in charge of each canning factory or raw shucking plant in this State shall each year distribute upon such bottoms as shall be designated by the State Board of Fisheries or its authority and in the manner required by it a quantity of oyster shells not exceeding 33 1/3 per cent of the quantity acquired by such cannery or raw shucking plant during the preceding season; which distribution or replanting shall be done under the direction or supervision of the Board of Fisheries within a radius of twenty miles from the factory or shucking plant distributing same and before the first day of June. Any refusal to comply with

this law shall subject the cannery or shucking plant to revocation of license and the person offending shall be punished by a fine of not less than One Hundred ($100.00) Dollars, or imprisonment of not less than one nor more than six months.

The Board of Fisheries under the supervision of its inspectors have completed the planting of 613,120 bushels of shell and 25,963 bushels of seed oysters on the oyster bottoms of the State and leased to different operators. The planting of the shell and seed oysters is as follows. They are planted by the operators; one of the inspectors of the Board of Fisheries supervising the planting and designating the grounds on which the shell and seed oysters are to be planted. He sees that the bottoms are properly planted and makes a report to the office of the Board each day as to the amount of shell or seed oysters planted; by whom planted and where planted. In case the bottoms are over planted he recommends to the Board that some of the oysters be removed, which is done by the operators under the supervision of the inspector instead of planting more shell on the grounds. Each inspector and operator is given the quota of shell and seed oysters the operator is to plant as required by law. This information is furnished by the Chief Inspector.

SUBJECT NUMBER EIGHT

TERRAPIN

The Board of Fisheries has placed in the waters of South Carolina this season 3,000 young terrapin. The Board has done this continuously since 1933 when the terrapin in our State were practically exterminated.

By carrying out the above plan we have created a very large supply of terrapin in our State, so much so that one will see them running along the highways in the coastal sections.

Years back, there was quite a demand for terrapin and at that time the dealers had a profitable business but for the past few years the demand has decreased very materially, for what reason we do not know, unless the war conditions were responsible for the decline. We cannot believe that the people of America have lost their taste for one of the most delicious of soups; generally known in South Carolina as cooter soup.

The Board of Fisheries is doing what it can to bring about a larger demand for these terrapin. Of course, the citizens of the coastal area of this State are still consuming a great number of terrapin, and it supplies good food to many of the inhabitants of the islands in the lower sections of South Carolina.

SUBJECT NUMBER NINE

STURGEON

Before the art of making caviar from sturgeon was discovered, sturgeon were abundant in most of the waters of the Atlantic Coast. So abundant were they, in fact, that William Penn in his correspondence often commented on the incredible numbers of these giant fish that ascended the Delaware River each year.

Little more than a century ago, the taking of the caviar began and soon the delicious quality of smoked sturgeon was also discovered, and thereafter the number of sturgeon declined rapidly due to over fishing. On April 30th, 1937, the General Assembly passed an Act declaring a closed season on sturgeon for three years. Upon the signing by the Governor in 1940 of an Act, the closed season on sturgeon fishing in South Carolina waters came to an end. Therefore at that time the sturgeon fishing was opened and we find that our catch has been slightly more each year.

Due to war conditions there were only two sturgeon buyers and shippers in this State this year. There were eleven fishermen operating since the war ended and we believe quite a number will go into the sturgeon business another year.

SUBJECT NUMBER TEN

CLAMS

The clam industry of South Carolina in the past few years has been steadily growing as to the amount of clams produced, but the industry has been handicapped by not having a law that allows the operators to ship clams out of the State.

As clams are a member of the oyster family, and as they are becoming more plentiful, we feel that it would be advis-

able for a law to be enacted which would allow the operators to ship their catch of clams if they so desired.

The spawning season for clams lasts from May through August, and during this time enormous numbers of eggs are discharged into the waters where they are fertilized. Within ten or twelve hours the eggs develop into a free swimming form called a larva. In a few days the larva develops shell and by the time it is 1/25th of an inch long it has all the organs of an adult clam, although it still swims freely through the river. Soon, however, it begins to attach itself for short periods to seaweeds or shells, and crawls about over the bottom. At one quarter of an inch it is able to burrow into the bottom.

The food of clams is chiefly tiny floating plants which are present in the seawater. Clams reach a marketable size of about two and one half inches in approximately two years.

No equipment is needed for the gathering of clams other than a spade, a stout heavy blade hoe or a long tin digging fork or rake. Clams are often gathered by treading. The gatherer wades through shallow water bare footed, feeling the mud with his feet. When a clam is located in the surface of the mud, it is quickly dislodged by the toes and is gathered into the bag or bucket in less time that it takes to say.

Clams are of high food value. Clam broth is easily digested. There is much more local demand for clams than there has been but as stated above there is no outside market at present for the reason mentioned.

Clams now can be located in Beaufort, Charleston, Colleton, Georgetown and Horry Counties, and we hope that the industry will develop rapidly in the near future.

SUBJECT NUMBER ELEVEN

CRABS

Crab eggs (0.01 inch in diameter) numbering around 2,000,000 in a single sponge or egg mass, are attached by the glandular secretion to hair like branches of the appendages of the abdomen or apron. About two hours are required to deposit a sponge and approximately two weeks for hatching under favorable conditions.

During the first seven or eight days of the hatching period the sponge is orange and yellow in color. Then the eggs become progressively darker until hatching time. The oldest crabs range in size from four to eight inches. The legal size for crabs is five or more inches in width. The female crab moults for the first time when it is sexually mature. In South Carolina the hatching occurs chiefly during the months of April, May and June.

The crab industry in South Carolina started growing in 1935 and it has grown by leaps and bounds since. We have in South Carolina one crab canning plant, located in Port Royal, known as the Blue Channel Corporation. Its president is Mr. Sterling G. Harris, a man of ability and one who knows the crab business. He operates a most modern plant and, in addition to the canning of crab meat, prepares the shells for serving the meat in baked form by housewives. After the canning process the material that is left is dried and ground into meal which is used for fertilizer and animal foods.

We have four concerns in South Carolina which pack and ship fresh crab meat. The largest of these is the Lupton Fish and Oyster Co., located in Charleston, S. C., and this company puts up large quantities of this meat and ship to many states in the Union.

The amount of crab meat canned in this State this season was 243,209 pounds. The amount of fresh crab meat sold was 40,781 pounds. The amount of soft shell crabs sold was 450 dozen. The products are very high class and are sold on a profitable basis. This industry ranks among the first seafood industries in the State, and it has developed, as stated, very much in the past ten years.

There was an exceptionally good bill passed by the General Assembly for the conservation of crabs which prohibits the catching of crabs of a smaller size than five inches from tip to tip across the back. This law is being enforced vigorously and has done a great deal towards conserving our crabs. The crab industry gives employment to a great many people and at a time when it is most needed.

Many people have the mistaken impression that the so called soft crab is a distinct species. The term refers to any

crab which has shed its old shell, and before the new shell has hardened, as a soft shell crab is considered good eating.

Large numbers of crabs are sought in the spring and early summer when they are still moulting. A newly moulted crab is particularly helpless to defend itself or even to escape by swimming. The actual casting of the shell requires only a few minutes, if all goes well, up to hour if the crab is disturbed or has suffered recent injury. Ordinarily the crab selects some sheltered place to undergo the moult, for during the twelve hours until the new shell hardens it is in imminent danger of being set upon by large fish or even by its own kind, or of being scooped up in a crabbers dip net.

SUBJECT NUMBER TWELVE

PROJECT IN HORRY COUNTY, LITTLE RIVER PRODUCTION OF OYSTER BOTTOMS

This project was started in December 1941, on bottoms in Horry County that had been depleted of oysters, but which had been producing oysters for many years in the past.

This department interested, W. P. A. in going along with it in the work of reclaiming these bottoms. We found that the shell in that area had been practically removed. To obtain same on the spot being impossible, we proceeded with the project by planting thousands of bushels of seed oysters and staking hundreds of squares of brush. This was an exceedingly tedious job but with the help of W.P.A., and the people of Horry County, we finally exceeded our hopes in the production of some real oyster beds which will go far towards supplying the citizens of that territory with a high class raw oyster. These bottoms have been closed, and we will open same for the removal of oysters during the present season. These oysters have now reached maturity and look as if they will produce a large yield. In this connection we recommend that a law be passed prohibiting the removal of these oysters from the beds (in-the-shell) without replacing the shell back on the banks after removal.

SUBJECT NUMBER THIRTEEN

BOATS

The South Carolina State Board of Fisheries now has the following fleet of boats which are used for patrol purposes and the supervision of oyster culture.

Charleston County—

One Cris Craft runabout 27 ft. long, two 140 HP Gray motors.
One TVT Thompson boat, one 22 HP Johnson motor.

Colleton County—

One Batteau 14 ft. long, one 5 HP Johnson motor.
One Cabin Cruiser 39 ft. long, one 40 HP Lathrop engine. (Property of U. S. Government).

Georgetown County—

One Cabin Cruiser 27 ft. long, one 40 HP Gray engine.

Beaufort County—

One Cabin Cruiser 26 ft. long, one 40 HP Gray engine.
One Thompson boat TVT 14 ft. long, one 22 HP Johnson motor.

Horry County—

One Sea Skiff 14 ft. long, one 9.8 HP Johnson Sea Horse motor.
One TVT Thompson boat.

Clarendon County—

One Batteau, one 5 HP Johnson Sea Horse motor.

On Storage—

Two 22 HP Johnson motors.

Jasper County—

One 5 HP Johnson motor.

SUBJECT NUMBER FOURTEEN

FISH

Although the term fish includes many varieties, we will only touch on those that are not referred to elsewhere in this report.

This department has no way in which to secure a complete report on most of the swimming fish of this State as the law does not require any tax or report on anything but shad and sturgeon although mullet, spots and other fish are caught by the thousands of pounds along the beaches of the two northern counties of this State. These fish are hauled away by trucks, fresh packed in ice, also salted. This industry furnishes the individual with plenty of cash but nothing to speak of to the State as the State only collects 25c per hundred yards on the nets and $2.50 license on the owner. The other help claim that they are fishing for a share of the fish for themselves and family for which they are entitled to 100 pounds under the law.

There is no doubt that a proper market and quick freezing facilities would enhance the value of this industry to the natives of this State as well as the nation as a whole.

The most popular species of fish caught in our rivers and the coast of our State, and used commercially are the shad, and red drum or better known as the channel bass. The species caught off shore and brought in to market are the black sea bass, red snapper and blue fish.

Although the State receives no tax revenue on swimming fish, other than shad, thousands of our citizens make a living the year round catching and selling fish on the retail market in our coastal cities and beach resorts. Whereas the State loses all this revenue, it is a great convenience to the housewife to have fresh fish delivered every day at her door. A small tax on these fish would not be harmful to the fishermen but would enable the State to get a monthly report on the catch and be in a position to better compile statistics on our fish industry so that same could be expanded, or to enact conservation laws on those species that are being fast depleted. No industry can be a success without information as to the supply or other statistics regarding the output and

price. Each species of fish caught and sold in this State should be studied and laws should be passed covering the best methods of conservation and advancement for each individual species and not a general law covering all. Fish along our coast are far too important in the lives and welfare of our natives to be taken lightly and it is time the public at large awakens to this fact.

SUBJECT NUMBER FIFTEEN

LAW ENFORCEMENT

This department has tried very hard to enforce the laws pertaining to shellfish and migratory fish. Our enforcement department consists of a Chief Inspector and ten District Inspectors.

It is the duty of the District Inspectors, under the direction of the Chief Inspector, to carry out all of the provisions of the commercial fishing laws in the waters of South Carolina. To enforce said laws and arrest persons for violation of same within his presence anywhere in the State. To execute warrants placed in his hands for violation of the fishery laws. To carry out the orders and instructions, and observe the rules and regulations coming from or through the Chief Inspector or directly from the Board of Fisheries.

It is also the duty of the inspectors to supervise the planting of all seed and oyster shell and to see that the oyster bottoms of our State are properly cultivated as per the laws requiring same; for instance, to see that 100 bushels of shell is planted per acre per annum on each acre of oyster bottoms leased and in addition to see that the operator plants 33 1/3 per cent of all oysters removed from the bottoms. It is his duty to make a daily report this office showing the amount of shell planted, and by whom planted and to see that the shell is properly distributed on the oyster bottoms, and if he should find certain beds where the oysters are clustering he should see that the proper amount of oysters are removed from such bottoms.

The number of cases made during the past season is 111, convicted 108, acquitted 2, cases pending 1. The amount of fines collected from the above cases is $923.50.

SUBJECT NUMBER SIXTEEN

RECOMMENDATIONS

Jurisdiction—Code Section 3300 page 2 should be added "other than shad and sturgeon."

Section 3299 page 2. Coastal Fisheries Definitions, same laws should be passed relative to mussels that control oysters.

Board of Fisheries prescribe rules, Section 3365 should be cancelled on page 27 as Code Section 3310 covers same.

Under Section 3374 page 31, should be added, to tax oysters, crab meat and shrimp shipped into the State the same tax as placed on South Carolina oysters.

Section 3377 on page 33, should be cancelled and place the proviso on Section 3376. Section 3376—Cancel $5.00 shrimp license.

Section 3379 on page 34, should be added that out of State shrimp boats should pay a license of $50.00 on boats and $50.00 for net. Making the license on State boats $10.00 and $10.00 on nets.

Section 3378 on page 33, manner of obtaining license should be cancelled as it is the same as Section 3380 on page 34.

Section 3381 on page 35, should be added under residence license shipping sturgeon and caviar "in addition to net license".

Section 3386 page 37, should change word 200 yd., to 400 yd., apart or within 400 yds., of any previously set net.

Section 3400 page 44, mesh of nets, omit words "for market".

Under Section 3406 page 45, there should be a limit placed on the length on catching sturgeon of less than 30 inches or destroy or use, they must be returned to the waters.

Act 714 page 56, should be cancelled as the U. S. Government has ruled this law out.

Act 225 page 62, should be cancelled as there are no hatcheries operating.

Section 3408 page 47, should be added that all parties operating canning factories pay a license of $50.00 per annum. Also, that $5.00 license should be added for all persons dealing in crabs.

Section 3376 page 32, should be changed, swimming fish license $5.00 instead of $2.50.

Every person helping to operate a net to catch edible fish for commercial purposes should be required to take out a license of $2.50.

The Board of Fisheries should be granted the authority to open or close the seasons in the South Carolina waters pertaining to shellfish and migratory fish whenever in their opinion they deem it necessary to do so.

Custody of Equipment Section 3323 page 10, cancel the attached provision and place instead the following, "that the Board of Fisheries herein created shall have the authority to purchase, equip, and maintain such equipment as is necessary for use for patrol service to enforce the laws, and the Board shall have authority to sell or exchange any equipment belonging to said patrol and if sold to reinvest the proceeds of such sale or make further exchange as may appear necessary and best for the interest of the State.

Cancel Section 3316 page 8, and the following be enacted in place of same, viz: There shall be appointed by the Board of Fisheries a Chief Inspector, five assistant Inspectors, boat tenders, part time inspectors, Secretary and Bookkeeper of the Board as may in the discretion of the Board be necessary to carry into effect and enforce the provisions of the law.

That an Act be passed authorizing the Board of Fisheries to employ a competent surveyor for the purpose of having a resurvey made of all oyster bottoms now leased, that there be appropriated a sufficient sum of money for said survey and that the rental of leased oyster bottoms be Two ($2.00) Dollars per acre per year.

SUBJECT NUMBER SEVENTEEN

REVENUE BY COUNTIES 1944-45

	Hampton	Charleston	Dorchester	Colleton	Clarendon	Beaufort	Jasper	Horry	Georgetown	Totals
Canned Oyster Stamps	$	$1380.00	$	$	$	$ 800.00	$	$	$	$ 2180.00
Raw Oyster Stamps	.....	142.60	....	.....	....	1379.00	40.00	5.00	94.75	1661.35
Oyster-in-Shell Tags	.....	84.30	....	.....	....	30.00	1.00	26.40	34.50	176.20
Clam Tags	.....	.....	....	.....	....	.....	.....	.....	.....	.....
Hickory Shad Tags	10.00	6.50	....	.....	.78	.....	15.60	37.20	51.00	121.68
White Shad Tags	53.50	156.30	24.05	140.55	23.40	.60	2.50	55.75	247.00	703.05
Terrapin Pen Licenses	.....	.....	....	25.00	....	25.00	.....	.....	50.00	100.00
Raw Shrimp Tags	.....	824.88	....	.....	....	1137.50	.....	6.25	223.50	2192.13
Cooked Shrimp Tags	.....	.....	....	.....	....	.....	.....	.....	.15	.15
Registered Boat Licenses	.....	222.00	....	.....	....	249.00	.....	.....	.....	471.00
Non-Registered Boat Licenses	.....	.....	....	.....	....	.....	.....	.....	.....	.....
Swimming Fish Licenses	42.50	217.50	27.50	102.50	22.50	40.00	37.50	82.50	292.50	865.00
Shrimp Boat Licenses	.....	295.00	....	.....	....	270.00	.....	75.00	120.00	760.00
Shrimp Net Licenses	.....	295.00	....	.....	....	270.00	.....	75.00	130.00	770.00
Oyster Canners Licenses	.....	2.00	....	.....	....	1.00	.....	.....	.....	3.00
Gill Net Licenses	8.50	27.00	1.25	16.75	14.50	2.50	3.50	25.25	41.50	140.75
Shad Buyers Licenses	50.00	75.00	....	50.00	....	.....	.....	50.00	100.00	325.00
Sturgeon Net Licenses	27.00	9.00	....	9.00	....	9.00	.....	.....	99.00	153.00
Raw Oyster Shucking Shed Licenses	.....	4.00	....	.....	....	12.00	1.00	1.00	4.00	22.00
Clam Buyers Licenses	.....	.....	...	.....	....	.....	.....	5.00	.....	5.00
Terrapin Tags	.....	.....	....	.....	....	13.40	.....	.....	.....	13.40
Soft Shell Crab Tags	.....	4.00	....	.....	....	.....	.....	.....	.....	4.00
Shrimp Buyers & Shippers Licenses	.....	75.00	....	.....	....	35.00	.....	10.00	40.00	160.00
Crab Fishermen Licenses	.....	88.50	....	.....	....	333.00	6.00	.....	.....	427.50
Crab Dealers Licenses	.....	20.00	....	.....	....	10.00	5.00	.....	.....	35.00
Barge Licenses	.....	30.00	....	.....	....	115.50	.....	.....	.....	145.50
Oyster-in-Shell Shippers Licenses	.....	12.00	....	1.00	....	9.00	1.00	7.00	19.00	49.00
Hard Crabs	.....	5.00	....	.....	....	.....	.....	.....	.....	5.00
Menhaden & Non-Food Fish Licenses	.....	.....	....	.....	....	.....	.....	621.00	.....	621.00
Dip Trap Licenses	.....	.....	....	.....	....	.....	.....	.....	.....	.....
Sturgeon Shippers' Licenses	.....	.....	....	.....	....	.....	.....	.....	120.00	120.00
Crab Meat Stamps	.....	92.20	....	.....	....	841.25	.....	.....	.....	933.45
Fines	.....	317.00	....	85.00	....	521.50	.....	.....	.....	923.50
Land Rent	.....	720.97	....	464.00	....	3089.03	.....	.....	111.50	4385.50
Shrimp Canners	.....	1.00	....	.....	....	.....	.....	.....	.....	1.00
	$191.50	$5106.75	$52.80	$893.80	$61.18	$9193.28	$113.10	$1082.35	$1778.40	$18473.16

SUBJECT NUMBER EIGHTEEN

FINANCIAL STATEMENT JUNE 30th, 1944 to JUNE 30th, 1945

	Paid Out	Balance	Appropriation
Salary Account	$19,260.00	$1,440.00	$20,700.00
Per Diem	460.00	340.00	800.00
Tender at Large	271.00	129.00	400.00
Legal Services	350.00	.....	350.00
Operation of Shad Hatchery	125.00	515.00	640.00
Oyster & Clam Culture	225.00	335.00	560.00
Travel	1,774.54	1,825.46	3,600.00
Telephone & Telegraph	125.09	74.91	200.00
Repairs	435.83	524.17	960.00
Printing & Advertising	.....	20.00	20.00
Water, Light, Heat & Power	60.00	20.00	80.00
Food Supplies	88.26	351.74	440.00
Office Supplies	1,086.66	113.34	1,200.00
Medical Supplies	.....	50.00	50.00
Motor Vehicle Supplies	2,066.30	333.70	2,400.00
Rents	487.98	112.02	600.00
Insurance	455.80	19.20	475.00
Office Equipment	7.20	192.80	200.00
Atlantic States Marine Fisheries	200.00	.....	200.00
	$27,478.66	$6,396.34	$33,875.00

Note. Amount appropriated pays the following salaries:

Chairman of the Board
Chief Inspector
Secretary and Bookkeeper
10 District Inspectors

Money Spent 1944-45	$27,478.66
Receipts 1944-45	18,473.16
Net cost of operating 1944-45	$ 9,005.50

SUBJECT NUMBER NINETEEN

1945-46

Shrimp Caught (lbs.)	2,548,955
Shrimp Headed (lbs.)	1,535,355
Oysters Gathered (bus.)	273,621
Oysters Shucked (gals.)	31,993
Oysters Canned (ozs.)	6,394,596
Number of Shad Caught	13,534
Number of Terrapin Caught	268
Number of Terrapin Shipped	152
Oyster Shell Planted (bus.)	613,120
Seed Oysters Planted (bus.)	25,963
Number of Sturgeon Caught	201
Oyster Land Under Lease (acres)	4,406.57
Crab Meat Sold	40,781
Crab Meat Canned (lbs.)	243,209
Soft Shell Crabs Sold (doz.)	450
Menhaden Caught	1,500,000

SUBJECT NUMBER TWENTY

REVENUE RECEIVED BY FISHERMEN IN SOUTH CAROLINA FOR 1944-45 SEASON ENDING JUNE 30th, 1945

The amount of money paid to the State by fishermen and operators covering the above season show that the fishermen are paying to the State for the privilege of operating in the State about 1.49% of money received.

The total amount of revenue received by the operators from their efforts during the season 1944-45 amounts to $1,238,-914.16. The amount paid by the fishermen and operators for licenses, tags, and stamps for the 1944-45 season amounts to $18,473.16 which shows that it cost the operators and fishermen a tax of 1.49% for their operations in South Carolina as per the itemized list.

Shrimp 1,535,355 lbs., at 20c	$307,075.00
Shad 60,911 lbs., at 40c	24,364.40
Raw Oysters 31,993 gals., at $4.00	127,972.00
Oysters-in-Shell 273,621 bu	273,621.00
Canned Oysters 6,394,596 oz	255,869.20
Crab Meat 40,781 at $1.25	50,976.25
Soft Shell Crab 450 doz	1,350.00
Terrapin 23 1/3 doz. at $30.00	670.00
Sturgeon 1,050 lbs., at 20c	210.00
Canned Crab Meat 243,209 lbs.	192,135.11
Menhaden 1,500,000 fish (59 tons)	4,602.00
Total	$1,238,844.96

The above does not include the catch of mullet, spots, whiting, croaker, flounder and red drum etc., upon which no statistics are available; nor does it include the individual catch of a person for family use or sale on the retail market which must amount to a very large sum of money.

All of which is respectfully submitted,

J. M. Witsell, *Chairman*
E. L. Sweat
J. Shepherd Thompson
E. E. Burroughs
J. E. Wilcox